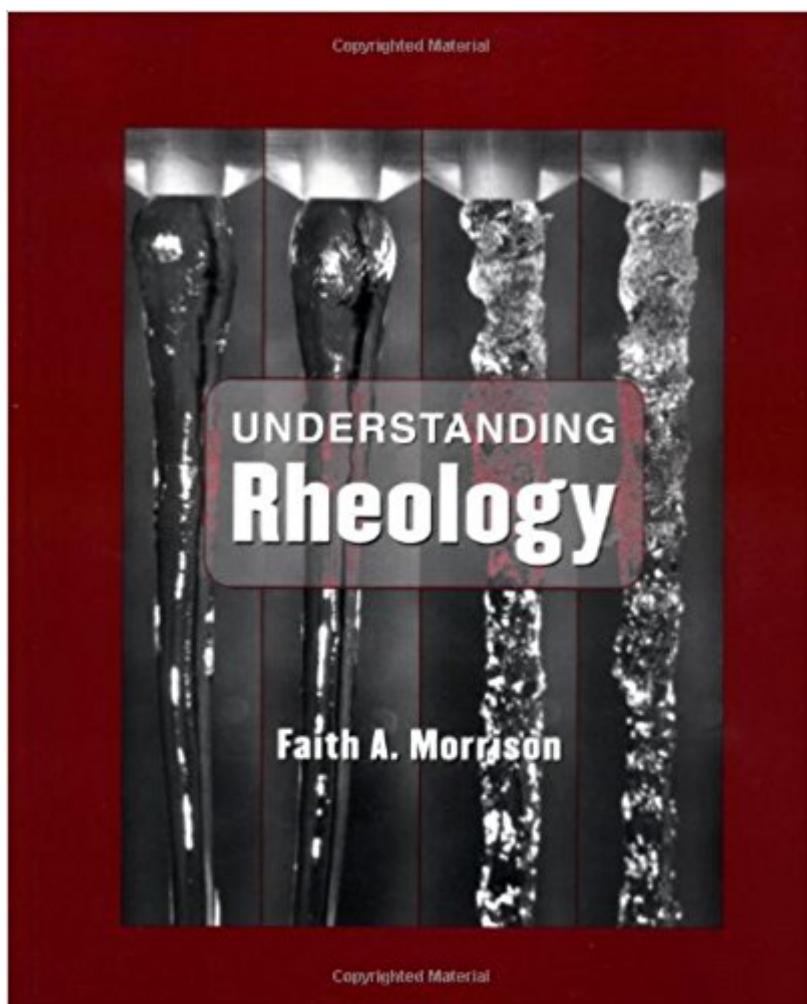


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# Understanding Rheology (Topics In Chemical Engineering)



## Synopsis

Rheology--the study of the deformation and flow of matter--deals primarily with the stresses generated during the flow of complex materials including polymers, colloids, foams, and gels. A rapidly growing and industrially important field, it plays a significant role in polymer processing, food processing, coating and printing, and many other manufacturing processes. Designed as a main text for advanced undergraduate- or graduate-level courses in rheology or polymer rheology, Understanding Rheology is also an ideal self-teaching guide for practicing engineers and scientists who find rheological principles applicable to their work. Covering the most important aspects of elementary modern rheology, this detailed and accessible text opens with an introduction to the field and then provides extensive background chapters on vector and tensor operations and Newtonian fluid mechanics. It continues with coverage of such topics as: \* Standard Flows for Rheology \* Material Functions \* Experimental Observations \* Generalized Newtonian Fluids \* Generalized Linear-Viscoelastic Fluids \* Nonlinear Constitutive Equations \* Rheometry, including rheo-optics Understanding Rheology incorporates helpful pedagogical aids including numerous problems for each chapter, many worked examples, and an extensive glossary. It also contains useful appendices on nomenclature, mathematical tools, predictions of constitutive equations, and birefringence.

## Book Information

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## Customer Reviews

"This book is a real tour de force and beautifully produced." Chemistry and Industry, May 2002

Faith A. Morrison is at Michigan Technological University.

I have been using this book now for about 2 months. It does do a fairly good job at describing rheology and its mathematics. I would recommend a strong base in differential equations as most of the problems are solved using diffy-q. Compared to some other books this book is relatively descriptive. The questions in the book are hard to solve, but some of the questions are addressed in other text books. Rheology is a difficult subject, so more examples would be better. Overall however this book is good.

I bought this because it was required for a class, it goes into good detail and the explanations are pretty strait forward making it easy to understand the first time through, but also has the details to be a good refrance book.

This is my go-to reference for all things rheology. Most topics are described in a very easy to follow way, and the examples are worked out if there is any doubt. I highly recommend this book!

A+

I regret I started my study to the Rheology with other books rather than this one , just it is excellent

The book covers the basic tools needed to understand rheology. From the vector and tensor analysis to the constitutive equations, this book offers good detail. It does lack some in-depth analysis of more difficult problems. The examples in the book are much different than assigned problems. The polymeric section containing the memory function was sufficient, however, it was not as clearly presented as in previous chapters. Overall, I recommend this book.

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